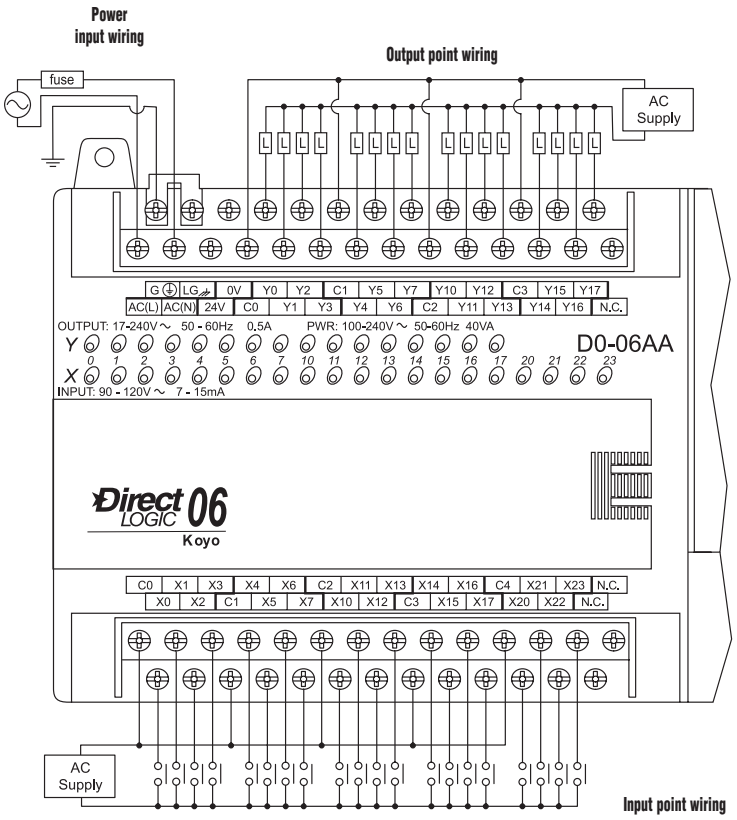
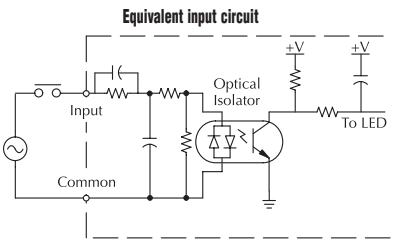
DL06 I/O Specifications

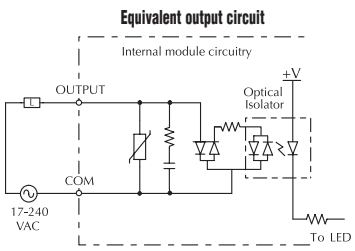
D0-06AA $259.00

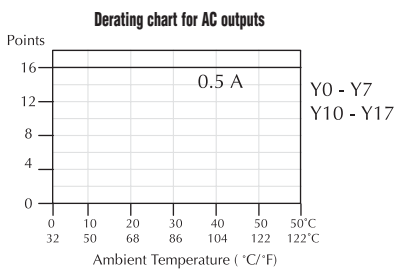
Wiring diagram and specifications

D0-06AA Specifications		
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)
AC Input Specifications	Number of Input Pts.	20
	Number of Commons	5 (isolated)
	Input Voltage Range	90-120VDC
	Frequency Range	47-63Hz
	Input Current	8mA @ 100 VAC, 50 Hz 10mA @ 100 VAC, 60Hz
	On Current/Voltage Level	>6mA/75VAC
	OFF Current/ Voltage Level	<2mA/20VAC
	OFF to ON Response	<40ms
	ON to OFF Response	<40ms
	Fuses	None
AC Output Specifications	Number of Output Points	16
	Number of Commons	4 (isolated)
	Output Voltage Range	17-240VAC 47-63Hz
	Peak Voltage	264VAC
	ON Voltage Drop	1.5 VAC>50mA 4.0VAC<50mA
	Maximum Current	0.5A/pt 2.0A/common
	Maximum Leakage Current	4mA at 264VAC
	Maximum Inrush Current	10A for 10ms
	Minimum Load	10mA
	OFF to ON Response	<1ms
	ON to OFF Response	<1ms + 1/2 cycle
	Fuses	None (external recommended)


Power input wiring
Output point wiring
fuse
AC Supply
G LG 0V Y0 Y2 C1 Y5 Y7 Y10 Y12 C3 Y15 Y17
AC(L) AC(N) 24V C0 Y1 Y3 Y4 Y6 C2 Y11 Y13 Y14 Y16 N.C.
OUTPUT: 17-240V~ 50 - 60Hz 0.5A
PWR: 100-240V~ 50-60Hz 40VA
D0-06AA
INPUT: 90 - 120V~ 7 - 15mA
Direct LOGIC 06
Koyo
C0 X1 X3 X4 X6 C2 X11 X13 X14 X16 C4 X21 X23 N.C.
X0 X2 C1 X5 X7 X10 X12 C3 X15 X17 X20 X22 N.C.
AC Supply
Input point wiring







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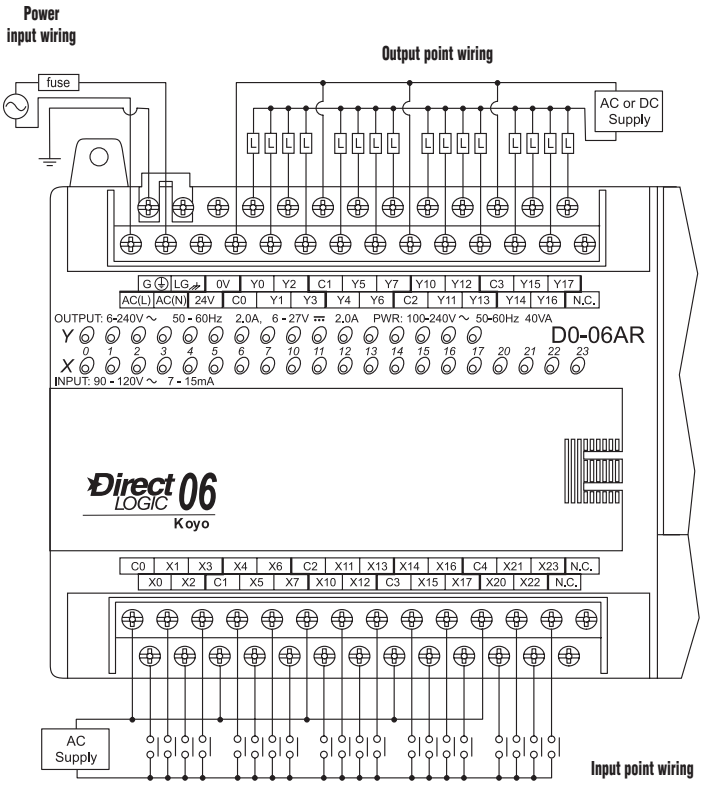
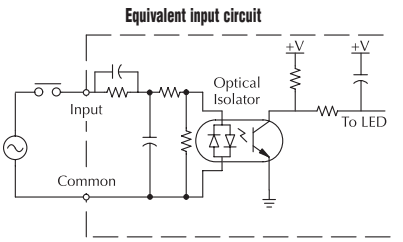
DL06 I/O Specifications

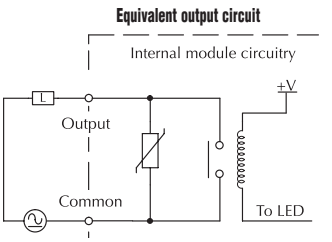
D0-06AR $245.00

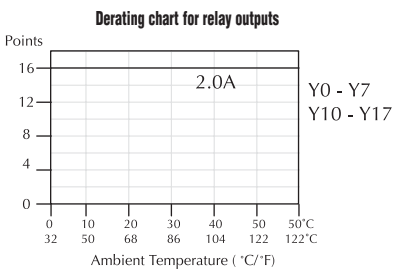
Wiring diagram and specifications

D0-06AR Specifications		
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)
AC Input Specifications	Number of Input Pts.	20
	Number of Commons	5 (isolated)
	Input Voltage Range	90-120VDC
	Frequency Range	47-63Hz
	Input Current	8mA @ 100 VAC at 50 Hz 10mA @ 100 VAC at 60Hz
	On Current/Voltage Level	>6mA/75VAC
	OFF Current/ Voltage Level	<2mA/20VAC
	OFF to ON Response	<40ms
	ON to OFF Response	<40ms
	Fuses	None
Relay Output Specifications	Number of Output Points	16
	Number of Commons	4 (isolated)
	Output Voltage Range	6-240VAC, 47-63Hz 6-27VDC
	Maximum Voltage	264VAC, 30VDC
	Maximum Current	2A/point 6A/common
	Maximum Leakage Current	0.1mA @ 246VAC
	Smallest Recommended Load	5mA @ 5VDC
	OFF to ON Response	<15ms
	ON to OFF Response	<10ms
	Status Indicators	Logic side
	Fuses	None (external recommended)









1-800-633-0405

DL06 I/O Specifications

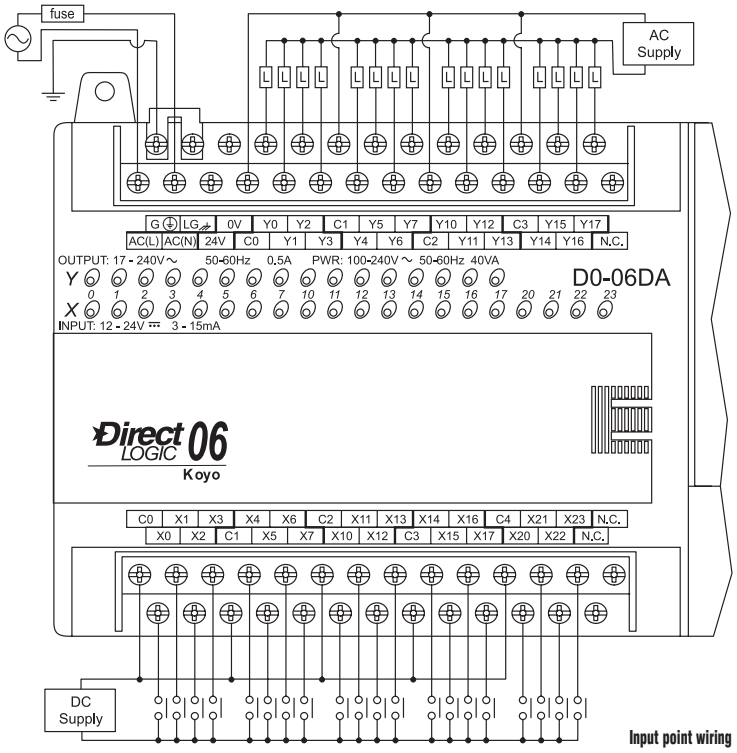
D0-06DA $239.00

Wiring diagram and specifications

D0-06DA Specifications			
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	5 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	Frequency Range	47-63Hz	
	Input Current	8mA @ 100VAC at 50Hz 10mA @ 100VAC at 60Hz	
	On Current/Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
AC Output Specifications	Number of Output Points	16	
	Number of Commons	4 (isolated)	
	Output Voltage Range	17-240VAC 47-63Hz	
	Peak Voltage	264VAC	
	ON Voltage Drop	1.5VAC>50mA 4.0VAC<50mA	
	Maximum Current	0.5A / point	
	Maximum Leakage Current	4mA @ 264VAC	
	Maximum Inrush Current	10A for 10ms	
	Minimum Load	10mA	
	OFF to ON Response	1ms	
	ON to OFF Response	1ms + 1/2 cycle	
	Fuses	None (external recommended)	

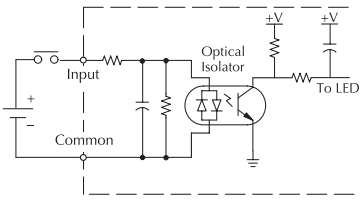
Power input wiring

Output point wiring

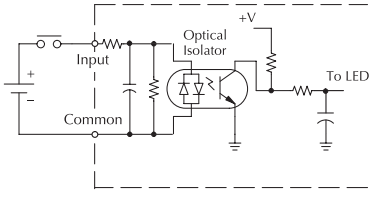

fuse
AC Supply
G LG 0V Y0 Y2 C1 Y5 Y7 Y10 Y12 C3 Y15 Y17
AC(L) AC(N) 24V C0 Y1 Y3 Y4 Y6 C2 Y11 Y13 Y14 Y16 N.C.
OUTPUT: 17 - 240V~ 50-60Hz 0.5A PWR: 100-240V~ 50-60Hz 40VA
D0-06DA
INPUT: 12 - 24V 3 - 15mA
Direct LOGIC 06
Koyo
C0 X1 X3 X4 X6 C2 X11 X13 X14 X16 C4 X21 X23 N.C.
X0 X2 C1 X5 X7 X10 X12 C3 X15 X17 X20 X22 N.C.
DC Supply

Input point wiring

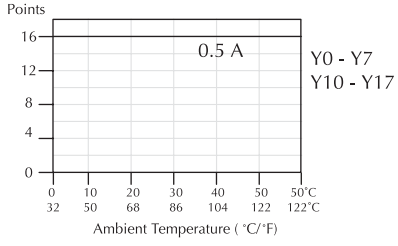
Equivalent input circuit, Standard inputs (X4-X23)



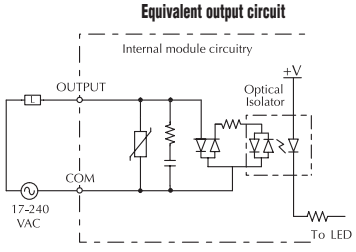
Equivalent input circuit, High-speed inputs (X0-X3)



Derating chart for AC outputs



Equivalent output circuit



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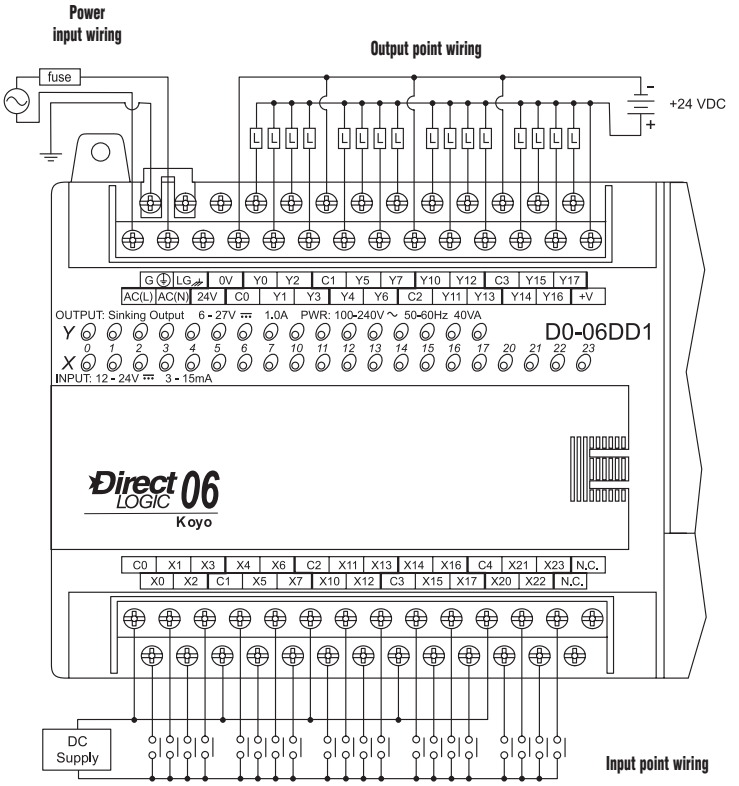
DL06 I/O Specifications

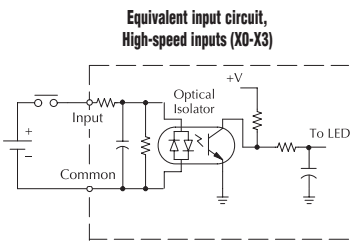
D0-06DD1 $199.00

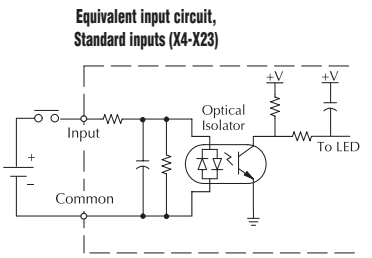
Wiring diagram and specifications

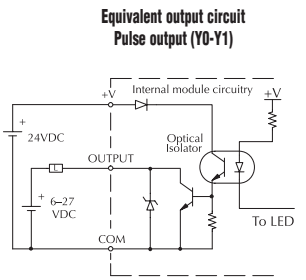
D0-06DD1 Specifications			
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	2 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	On Current/ Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
DC Output Specifications	Number of Output Points	16 (sinking)	
	Number of Commons	4 isolated	
	Output Voltage Range	6-27VDC	
	Peak Voltage	50VDC	
	Max. Frequency (Y0, Y1)	7kHz	
	ON Voltage Drop	0.3VDC @ 1A	
	Maximum Current	0.5A / pt (Y0-Y1)* 1.0A pt (Y2-Y17)	
	Maximum Leakage Current	15µ @ 30VDC	
	Maximum Inrush Current	2A for 100ms	
	OFF to ON Response	<10µs	
	ON to OFF Response	<20µs (Y0-Y1) <60µs (Y2-Y17)	
	External DC Power Required	20-28VDC 150mA max.	
	Status Indicators	Logic side	
	Fuses	None (external recommended)	

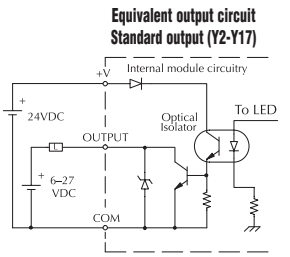
*When Y0-Y1 are not used for pulse outputs, maximum current output is 1.0A.

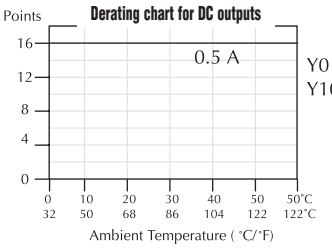

Power input wiring
Output point wiring
fuse
+24 VDC
G LG 0V Y0 Y2 C1 Y5 Y7 Y10 Y12 C3 Y15 Y17
AC(L) AC(N) 24V C0 Y1 Y3 Y4 Y6 C2 Y11 Y13 Y14 Y16 +V
OUTPUT: Sinking Output 6 - 27V ⎓ 1.0A PWR: 100-240V ~ 50-60Hz 40VA
D0-06DD1
INPUT: 12 - 24V ⎓ 3 - 15mA
Direct LOGIC 06
Koyo
C0 X1 X3 X4 X6 C2 X11 X13 X14 X16 C4 X21 X23 N.C.
X0 X2 C1 X5 X7 X10 X12 C3 X15 X17 X20 X22 N.C.
DC Supply
Input point wiring











1-800-633-0405

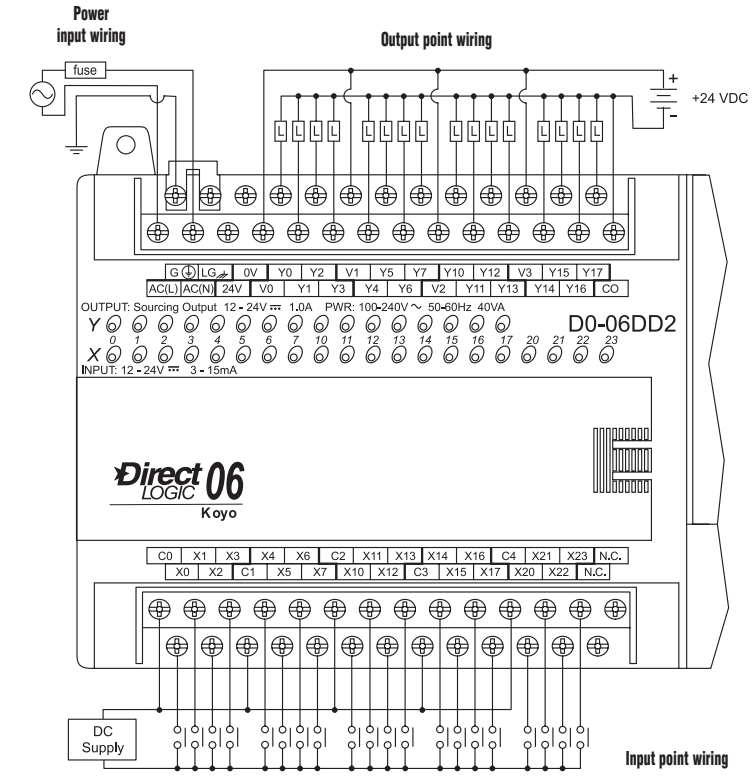
DL06 I/O Specifications

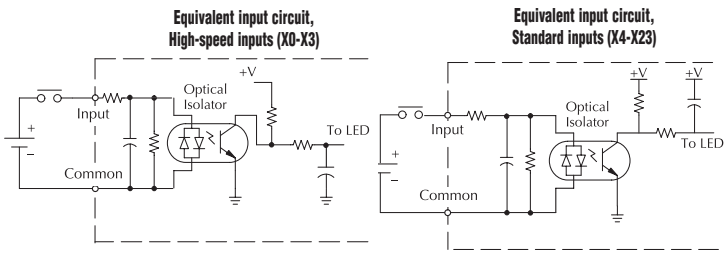
D0-06DD2 $199.00

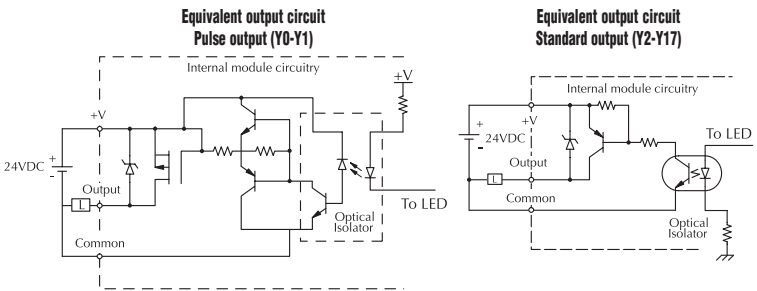
Wiring diagram and specifications

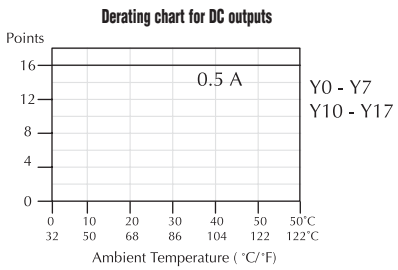
D0-06DD2 Specifications			
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	2 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	On Current/ Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
DC Output Specifications	Number of Output Points	16 (sourcing)	
	Number of Commons	4 isolated	
	Output Voltage Range	12-24VDC	
	Peak Voltage	30VDC	
	Max. Frequency (Y0, Y1)	7kHz	
	ON Voltage Drop	0.3VDC @ 1A	
	Maximum Current	0.5A / pt (Y0-Y1)* 1.0A pt (Y2-Y17)	
	Maximum Leakage Current	15µ @ 30VDC	
	Maximum Inrush Current	2A for 100ms	
	OFF to ON Response	<10µs	
	ON to OFF Response	<20µs (Y0-Y1) <0.5ms (Y2-Y17)	
	External DC Power Required	20-28VDC 150mA max.	
	Status Indicators	Logic side	
	Fuses	None (external recommended)	

*When Y0-Y1 are not used for pulse outputs, maximum current output is 1.0A.









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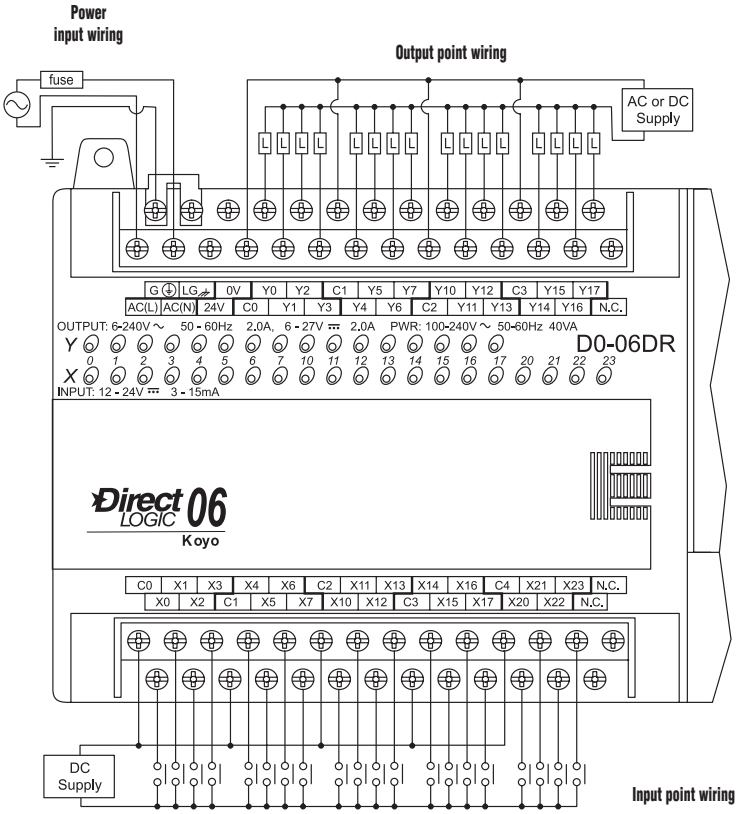
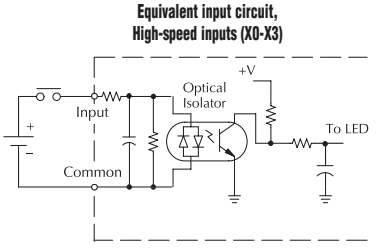
DL06 I/O Specifications

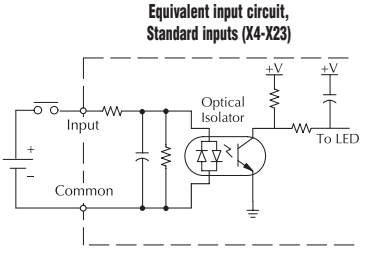
D0-06DR $215.00

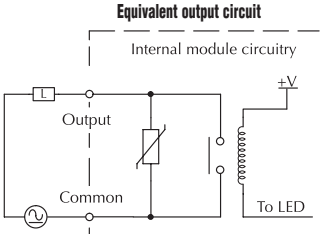
Wiring diagram and specifications

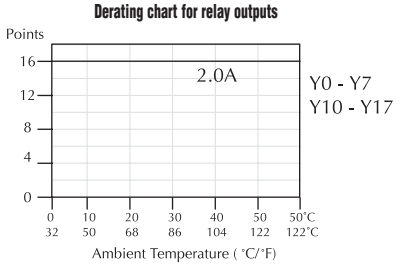
D0-06DR Specifications			
AC Power Supply Specifications	Voltage Range	95-240VAC (30VA)	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	5 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	On Current/ Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
Relay Output Specifications	Number of Output Points	16	
	Number of Commons	4 (isolated)	
	Output Voltage Range	6-240VAC, 47-63Hz 6-27VDC	
	Maximum Voltage	264VAC, 30VDC	
	Maximum Output Current	2A/point, 6A/common	
	Maximum Leakage Current	0.1mA @ 264VAC	
	Smallest Recommended Load	5mA @ 5VDC	
	OFF to ON Response	<15ms	
	ON to OFF Response	<10ms	
	Status Indicators	Logic side	
	Fuses	None (external recommended)	


Power input wiring
Output point wiring
fuse
AC or DC Supply
G LG 0V Y0 Y2 C1 Y5 Y7 Y10 Y12 C3 Y15 Y17
AC(L) AC(N) 24V C0 Y1 Y3 Y4 Y6 C2 Y11 Y13 Y14 Y16 N.C.
OUTPUT: 6-240V ~ 50 - 60Hz 2.0A, 6 - 27V ⎓ 2.0A PWR: 100-240V ~ 50-60Hz 40VA
Y 0 1 2 3 4 5 6 7 10 11 12 13 14 15 16 17 20 21 22 23
X
INPUT: 12 - 24V ⎓ 3 - 15mA
D0-06DR
Direct LOGIC 06
Koyo
C0 X1 X3 X4 X6 C2 X11 X13 X14 X16 C4 X21 X23 N.C.
X0 X2 C1 X5 X7 X10 X12 C3 X15 X17 X20 X22 N.C.
DC Supply
Input point wiring









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DL06 I/O Specifications

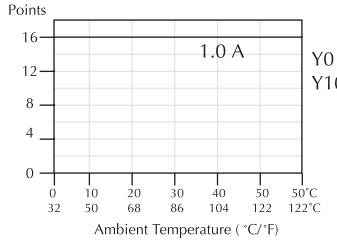
D0-06DD1-D $199.00

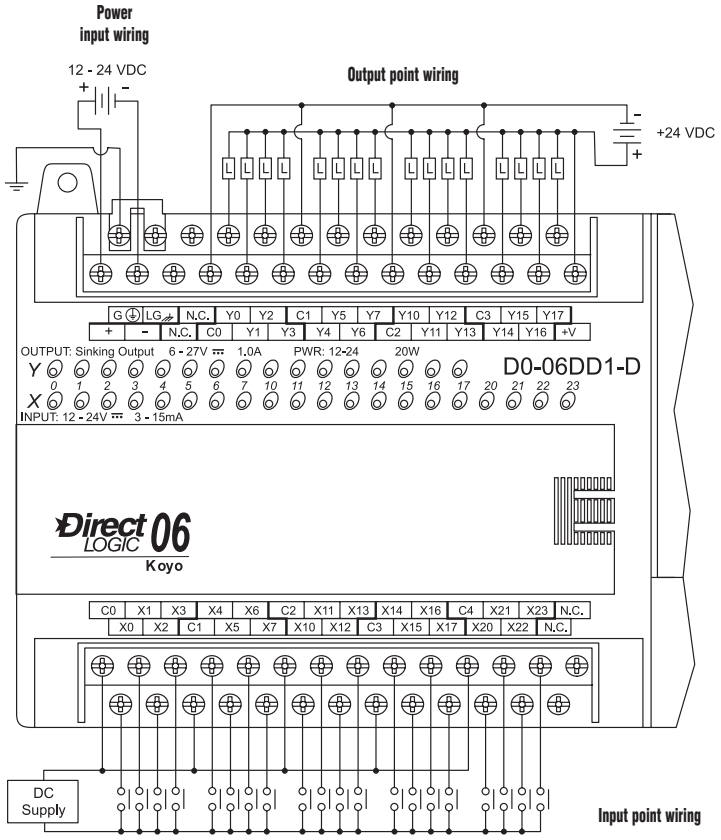
Wiring diagram and specifications

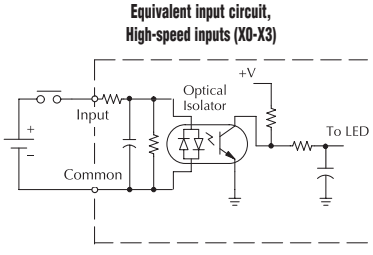
D0-06DD1-D Specifications			
DC Power Supply Specifications	Voltage Range	12-24VDC (15W)	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	2 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	On Current/ Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
DC Output Specifications	Number of Output Points	16 (sinking)	
	Number of Commons	4 isolated	
	Output Voltage Range	6-27VDC	
	Peak Voltage	50VDC	
	Max. Frequency (Y0, Y1)	7kHz	
	ON Voltage Drop	0.3VDC @ 1A	
	Maximum Current	0.5A / pt (Y0-Y1)* 1.0A / pt (Y2-Y5)	
	Maximum Leakage Current	15µ @ 30VDC	
	Maximum Inrush Current	2A for 100ms	
	OFF to ON Response	<10µs	
	ON to OFF Response	<20µs (Y0-Y1) <60µs (Y2-Y17)	
	External DC Power Required	20-28VDC 150mA max.	
	Status Indicators	Logic side	
	Fuses	None (external recommended)	

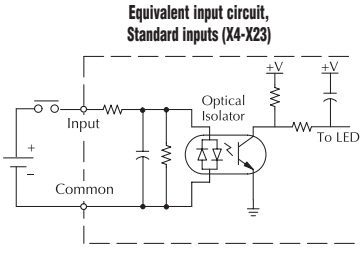
*When Y0-Y1 are not used for pulse outputs, maximum current output is 1.0A.

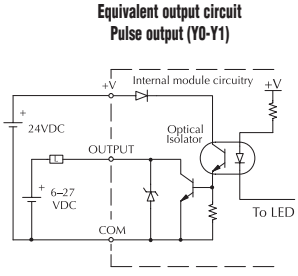
Derating chart for DC outputs

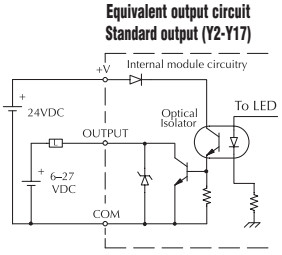












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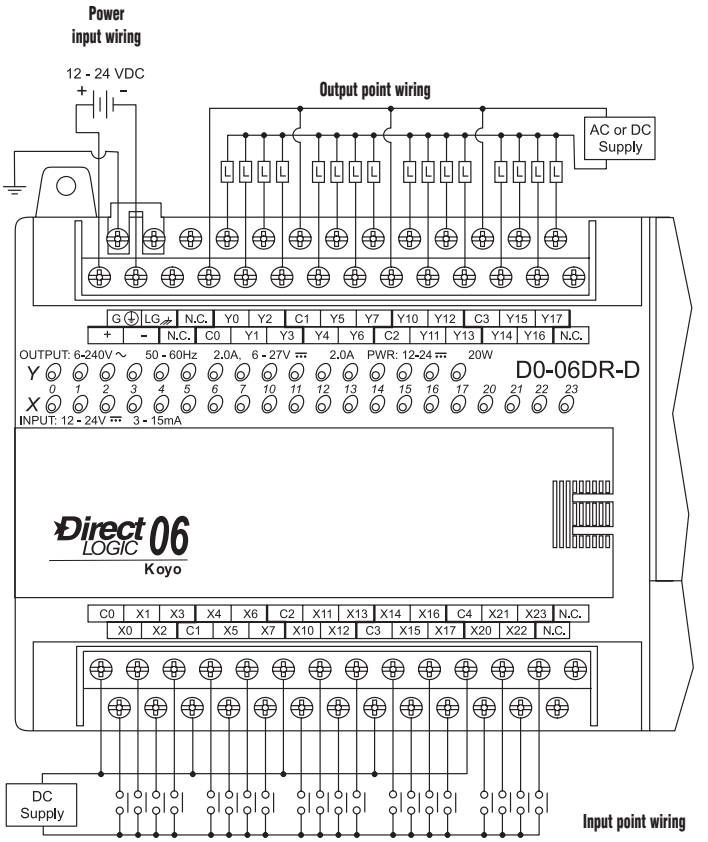
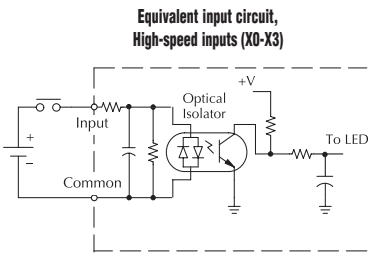
DL06 I/O Specifications

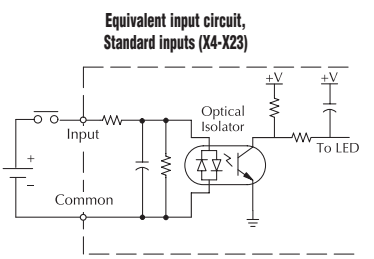
D0-06DR-D $215.00

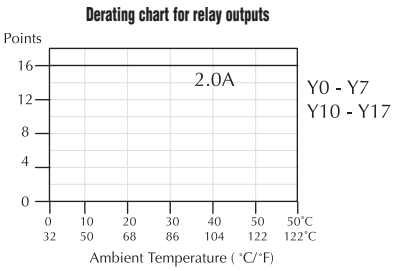
Wiring diagram and specifications

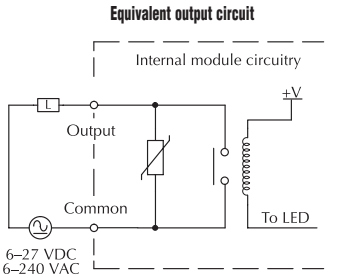
D0-06DR-D Specifications			
DC Power Supply Specifications	Voltage Range	12-24VDC 20W max.	
DC Input Specifications	Number of Input Pts.	20 (sink/source)	
	Number of Commons	5 (isolated)	
	Input Voltage Range	12-24VDC	
	Input Impedance	(X0-X3) 1.8K @ 12-24VDC (X4-X7) 2.8K @ 12-24VDC	
	On Current/ Voltage Level	>5mA/10VDC	
	OFF Current/ Voltage Level	<0.5mA/<2VDC	
	Response Time	X0-X3	X4-X23
	OFF to ON Response	<100µs	<8ms
	ON to OFF Response	<100µs	<8ms
	Fuses	None	
Relay Output Specifications	Number of Output Points	16	
	Number of Commons	4 (isolated)	
	Output Voltage Range	6-240VAC, 47-63Hz 6-27VDC	
	Maximum Voltage	264VAC, 30VDC	
	Maximum Output Current	2A/point, 6A/common	
	Maximum Leakage Current	0.1mA @ 264VAC	
	Smallest Recommended Load	5mA @ 5VDC	
	OFF to ON Response	<15ms	
	ON to OFF Response	<10ms	
	Status Indicators	Logic side	
	Fuses	None (external recommended)	


Power input wiring
12 - 24 VDC
Output point wiring
AC or DC Supply
OUTPUT: 6-240V ~ 50 - 60Hz 2.0A, 6 - 27V ⎓ 2.0A PWR: 12-24 ⎓ 20W
D0-06DR-D
INPUT: 12 - 24V ⎓ 3 - 15mA
Direct LOGIC 06
Koyo
DC Supply
Input point wiring









1-800-633-0405

The DL05 & DL06 Family of Products

The DL05 micro PLC family includes eight different models. Each has eight inputs and six outputs in the base unit. The DL05 has one option card slot, which can be used to expand the I/O count, provide additional communications capability or add a real-time clock and battery back-up.

The larger DL06 micro PLC family has 20 inputs and 16 outputs in the base unit. The DL06 has four option card slots which can be used to add I/O or provide additional communications options.

Instruction sets

The DL05 CPU offers PID capability, high-speed counting, and the same powerful instruction set as our popular DL250 CPU. All DL05 PLCs have two built-in RS-232C communications ports that can be used for programming, operator interface, networking, etc.

The DL06 CPU offers PID capability, floating point number handling, and an instruction set very similar to our new D2-260 CPU. Many powerful new instructions are included. All DL06 PLCs have two built-in communications ports that can be used for programming, operator interface, networking, etc. One of the DL06 ports is a multi-function port capable of RS232C, RS422, or RS485 communications.

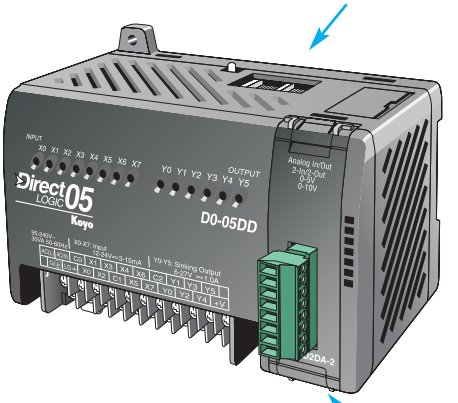
Power options

The DL05 and DL06 families have AC and DC power options. They are also offered with a variety of I/O options. You can explore the Quick Selection Guide on the next page to choose the right PLC for your application.

High-speed inputs and outputs

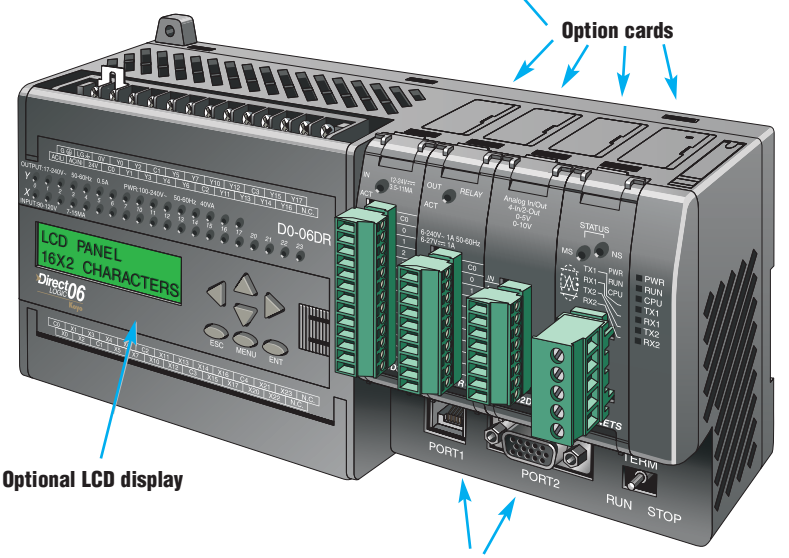
Units with DC inputs have selectable high-speed input features on three input points (DL05) or four input points (DL06). Units with DC outputs can use the first two outputs as a single bi-directional pulse output. Detailed specifications for each model appear later in this section.

DL05
8 in/6 out



Starting at
$99.00

DL06
20 in/16 out



Starting at
$199.00

General Specifications	AC Powered	DC Powered
Power	110/220VAC (+ 10%, -15%), 50-60Hz	12/24VDC
Input Voltage Range	95-240VAC	12-24VDC
Maximum Power	30VA (DL05) 40VA (DL06)	20W
Maximum Inrush Current	13A, 1ms (240VAC)	10A < 1ms
Storage Temperature	-4ºF to 158ºF (-20ºC to 70ºC)	
Ambient Operating Temperature	32°F to 131°F (0°C to 55°C)	
Ambient Humidity	5% - 95% relative humidity (non-condensing)	
Vibration Resistance	MIL STD 810C, Method 514.2	
Shock Resistance	MIL STD 810C, Method 516.2	
Noise Immunity	NEMA (ICS3-304)	
Atmosphere	No corrosive gases	

1-800-633-0405

Features at a Glance

The DL05 and DL06 micro PLCs are complete self-contained systems. The CPU, power supply, and I/O are all included inside the same housing. Option modules are available to expand the capability of each PLC family for more demanding applications. The standard features of these PLCs are extraordinary and compare favorably with larger and more expensive PLCs.

The specification tables to the right are meant for quick reference only. Detailed specifications and wiring information for each model of the DL05 and DL06 PLCs begin on page 279.

Program capacity

Most boolean ladder instructions require a single word of program memory. Other instructions, such as timers, counters, etc., require two or more words. Data is stored in V-memory in 16-bit registers.

Performance

The performance characteristics shown in the tables represent the amount of time required to read the inputs, solve the Relay Ladder Logic program and update the outputs.

Instructions

A complete list of instructions is available at the end of this section.

Communications

The DL05 and DL06 offer powerful communication features normally found only on more expensive PLCs.

Special features

The DC input and DC output PLCs offer high-speed counting or pulse output. Option card slots allow for discrete I/O expansion, analog I/O, or additional communication options.

1-800-633-0405

DL05 CPU Specifications

System capacity

Total memory available (words)	6K
Ladder memory (words)	2,048
V-memory (words)	4,096
User V-memory	3,968
Non-volatile user V-memory	128
Battery backup	Yes[1]
Total built-in I/O	14
Inputs	8
Outputs	6
I/O expansion	Yes[1]

Performance

Contact execution (Boolean)	0.7µs
Typical scan (1K Boolean)[2]	1.5-3ms.

Instructions and diagnostics

RLL ladder style	Yes
RLLPLUS/flowchart style (Stages)	Yes/256
Run-time editing	Yes
Scan	Variable/fixed
Number of Instructions	133
Types of Instructions:	
Control relays	512
Timers	128
Counters	128
Immediate I/O	Yes
Subroutines	Yes
For/next loops	Yes
Timed interrupt	Yes
Integer math	Yes
Floating-point math	No
PID	Yes
Drum sequencers	Yes
Bit of word	Yes
ASCII print	Yes
Real-time clock/calendar	Yes[1]
Internal diagnostics	Yes
Password security	Yes
System and user error log	No

Communications

Built-in ports	Two RS-232C
Protocols supported:	
K-sequence (proprietary protocol)	Yes
DirectNet master/slave	Yes
MODBUS RTU master/slave	Yes
ASCII out	Yes
Baud rate	
Port 1	9,600 baud (fixed)
Port 2	selectable 300-38,400 baud (default 9,600)

Specialty Features

Filtered inputs	Yes[3]
Interrupt input	Yes[3]
High speed counter	Yes, 5kHz[3]
Pulse output	Yes, 7kHz[3]
Pulse catch input	Yes[3]

1- These features are available with use of certain option cards. Option card specifications are located later in this section.

2- Our 1K program includes contacts, coils, and scan overhead. If you compare our products to others, make sure you include their scan overhead.

3- Input features only available on units with DC inputs and output features only available on units with DC outputs.

DL06 CPU Specifications

System capacity

Total memory available (words)	14.8K
Ladder memory (words)	7680
V-memory (words)	7616
User V-memory	7488
Non-volatile user V-memory	128
Built-in battery backup	Yes
Total I/O	36
Inputs	20
Outputs	16
I/O expansion	Yes[1]

Performance

Contact execution (Boolean)	0.6µs
Typical scan (1K Boolean)[2]	1-2ms.

Instructions and diagnostics

RLL ladder style	Yes
RLLPLUS/flowchart style (Stages)	Yes/1024
Run-time editing	Yes
Scan	Variable/fixed
Number of Instructions	229
Types of Instructions:	
Control relays	1024
Timers	256
Counters	128
Immediate I/O	Yes
Subroutines	Yes
For/next loops	Yes
Table functions	Yes
Timed interrupt	Yes
Integer math	Yes
Trigonometric functions	Yes
Floating-point math	Yes
PID	Yes
Drum sequencers	Yes
Bit of word	Yes
Number type conversion	Yes
ASCII in, out, print	Yes
LCD instruction	Yes
Real-time clock/calendar	Yes
Internal diagnostics	Yes
Password security	Yes
System and user error log	No

Communications

Built-in ports:	One RS-232C
	One multi-function RS232C/RS422/RS485
Protocols supported:	
K-sequence (proprietary protocol)	Yes
DirectNet master/slave	Yes
MODBUS RTU master/slave	Yes
ASCII in/out	Yes
Baud rate	
Port 1	9,600 baud (fixed)
Port 2	selectable 300-38,400 baud (default 9,600)

Specialty Features

Filtered inputs	Yes[3]
Interrupt input	Yes[3]
High speed counter	Yes, 7kHz[3]
Pulse output	Yes, 10kHz[3]
Pulse catch input	Yes[3]

1- These features are available with use of certain option cards. Option card specifications are located later in this section.

2- Our 1K program includes contacts, coils, and scan overhead. If you compare our products to others, make sure you include their scan overhead.

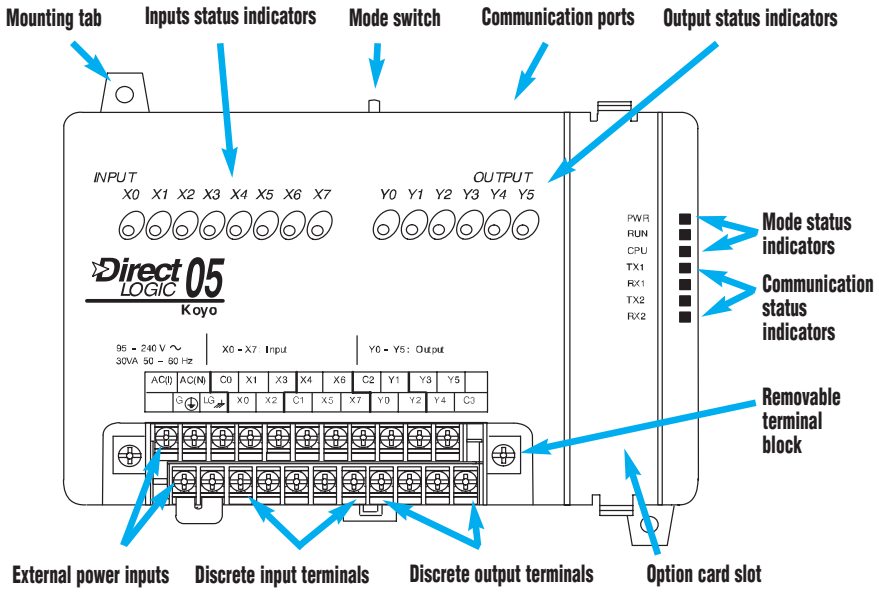
3- Input features only available on units with DC inputs and output features only available on units with DC outputs.

Features at a Glance

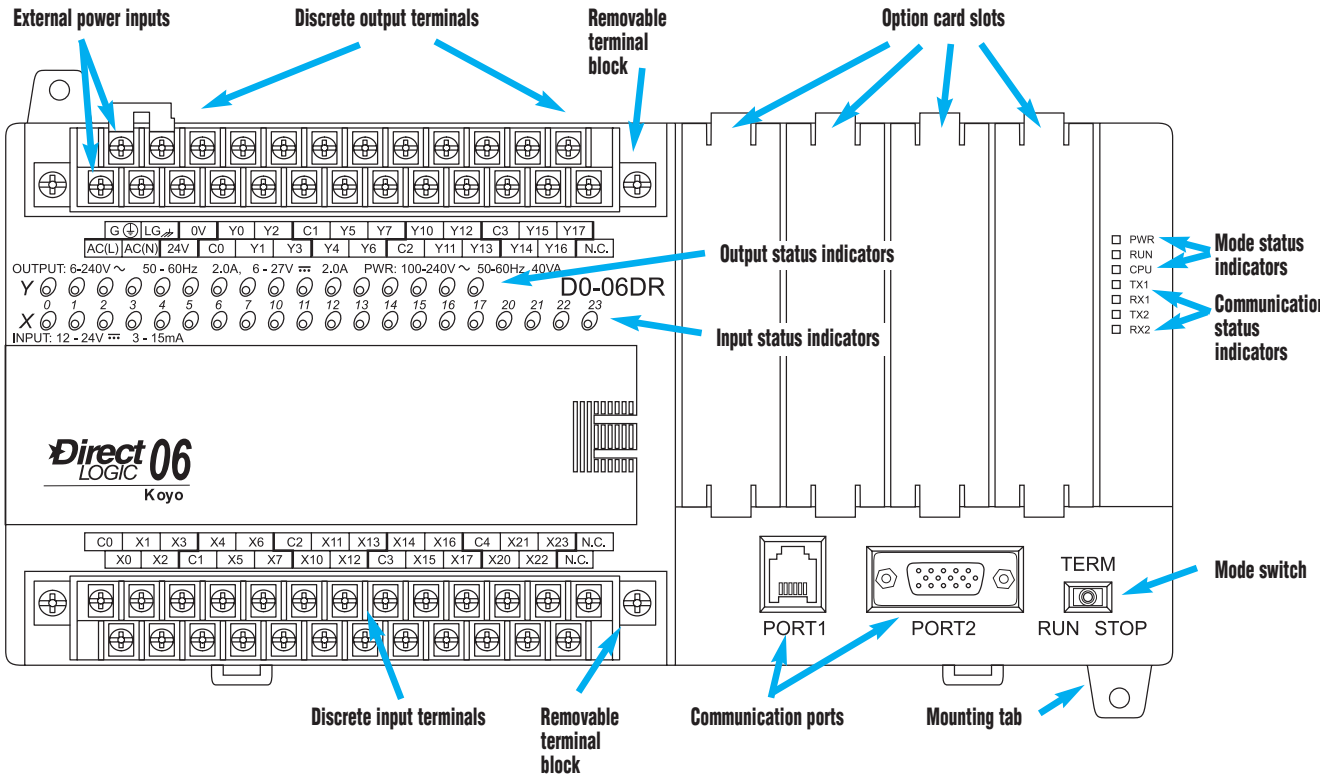
*Direct*SOFT32 software

The DL05 and DL06 PLCs use the same familiar *Direct*SOFT32 programming software that our larger PLCs use. Special low-priced software versions are available for the micro PLCs, but if you already own the complete programming package, that will work too (version 4.0 or later).

The PC-PGM-105 software is sufficient to program the DL05 PLC and the DL105 PLC (which is featured in the next section). Version 2.4 is required, but we always recommend the latest version for the most robust features. The DL06 PLC requires Version 4.0 of *Direct*SOFT32, and comes bundled with the DL05 and DL105 software in the PC-PGM-BRICK package.



Hardware features diagrams



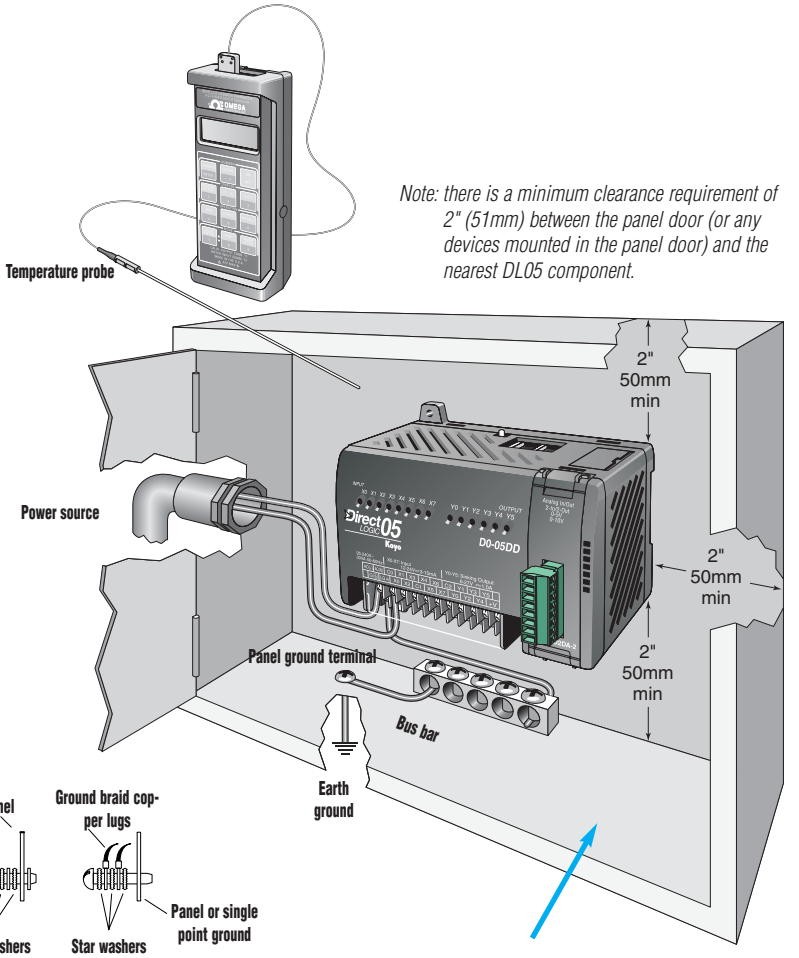
www.automationdirect.com/dl05and06

Product Dimensions and Installation

It is important to understand the installation requirements for your DL05 or DL06 system. Your knowledge of these requirements will help ensure that your system operates within its environmental and electrical limits.

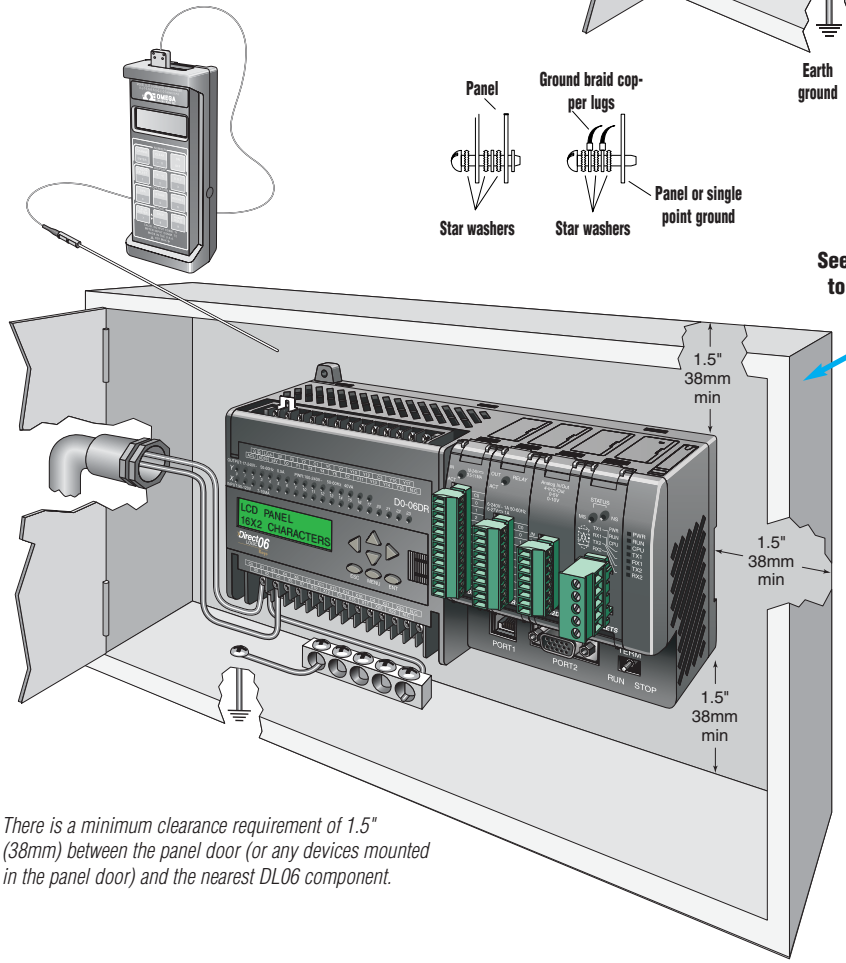
Plan for safety

This desk reference should never be used as a replacement for the user manual. You can purchase, download free, or view online the user manuals for these products. The D0-USER-M is the publication for the DL05 PLCs, and the D0-06USER-M is the publication for the DL06 PLCs. The D0-OPTIONS-M is the user manual for the option cards. These user manuals contain important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.



Note: there is a minimum clearance requirement of 2" (51mm) between the panel door (or any devices mounted in the panel door) and the nearest DL05 component.

See the enclosure section of this desk reference to find an enclosure that fits your application.



Note: There is a minimum clearance requirement of 1.5" (38mm) between the panel door (or any devices mounted in the panel door) and the nearest DL06 component.

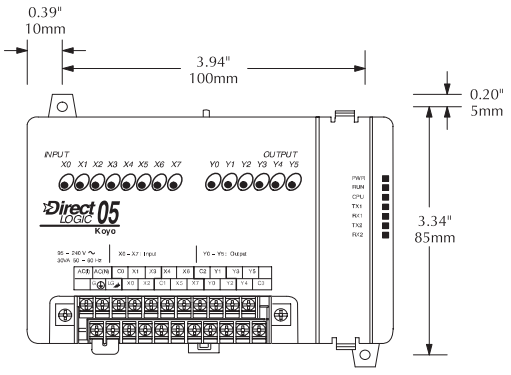
Environmental Specifications for DL05 and DL06	
Storage Temperature	-4º F-158ºF (-20ºC to 70ºC)
Ambient Operating Temperature	32ºF-131ºF (0º to 55ºC)
Ambient Humidity	5 to 95% relative humidity (non-condensing)
Vibration Resistance	MIL STD 810C Method 514.2
Shock Resistance	MIL STD 810C Method 516.2
Noise Immunity	NEMA (ICS3-304)
Atmosphere	No corrosive gases

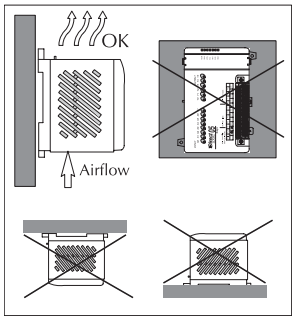
1-800-633-0405

Product Dimensions and Installation

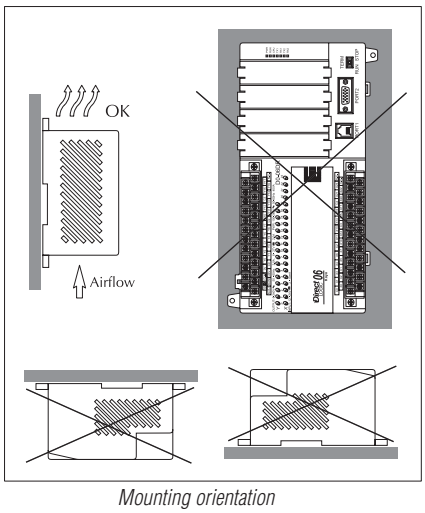
Unit dimensions and mounting orientation

DL05 and DL06 PLCs must be mounted properly to ensure ample airflow for cooling purposes. It is important to follow the unit orientation requirements and to verify that the PLC's dimensions are compatible with your application. Notice particularly the grounding requirements and the recommended cabinet clearances.

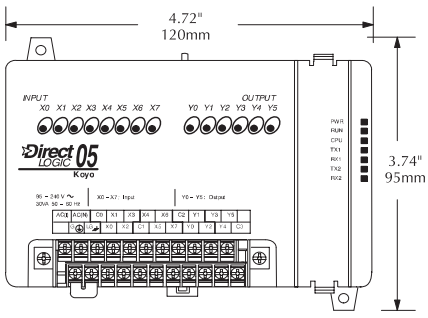


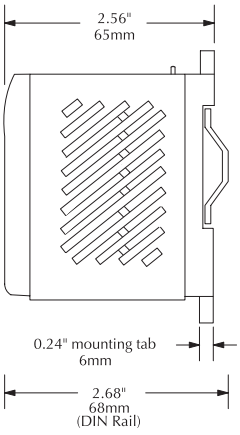


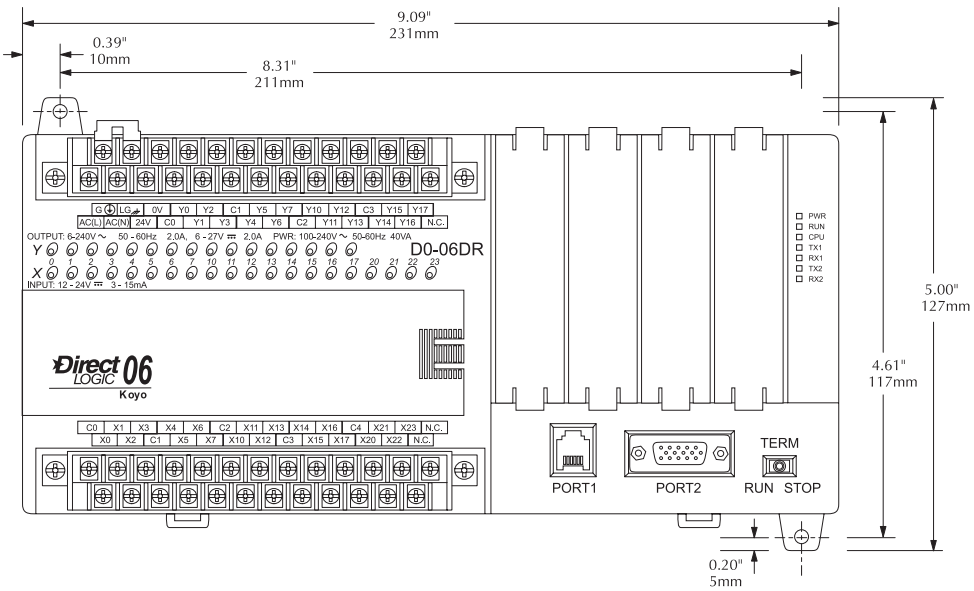
Mounting orientation

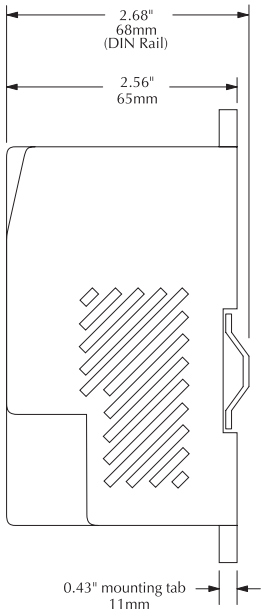


Mounting orientation









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Power Budgeting for the DL06

The DL06 has four option card slots. To determine whether the combination of cards you select will have sufficient power, you will need to perform a power budget calculation.

Power supplied

Power is supplied from two sources, the internal base unit power supply and, if required, an external supply (customer furnished). The D0-06xx (AC powered) PLCs supply a limited amount of 24VDC power. The 24VDC output can be used to power external devices.

For power budgeting, start by considering the power supplied by the base unit. All DL06 PLCs supply the same amount of 5VDC power. Only the AC units offer 24VDC auxiliary power.

Be aware of the trade-off between 5VDC power and 24VDC power. The amount of 5VDC power available depends on the amount of 24VDC power being used, and the amount of 24VDC power available depends on the amount of 5VDC power consumed. Determine the amount of internally supplied power from the table to the right.

Power required by base unit

Because of the different I/O configurations available in the DL06 family, the power consumed by the base unit itself varies from model to model. Subtract the amount of power *required by* the base unit from the amount of power *supplied by* the base unit. Be sure to subtract 5VDC and 24VDC amounts.

Power required by option cards

Next, subtract the amount of power required by the option cards you are planning to use. Again, remember to subtract both 5VDC and 24VDC.

If your power budget analysis shows surplus power available, you should have a workable configuration.

DL06 Power Supplied by Base Units

Part Number	5 VDC (mA)	24 VDC (mA)
D0-06xx	1500mA	300mA
	2000mA	200mA
D0-06xx-D	1500mA	none

DL06 Base Unit Power Required

Part Number	5 VDC	24 VDC
D0-06AA	800mA	none
D0-06AR	900mA	none
D0-06DA	800mA	none
D0-06DD1	600mA	280mA*
D0-06DD2	600mA	none
D0-06DR	950mA	none
D0-06DD1-D	600mA	none
D0-06DR-D	950mA	none

* Only if auxiliary 24VDC power is connected to V+ terminal.

DL06 Power Consumed by Other Devices

Part Number	5 VDC (mA)	24 VDC (mA)
D0-06LCD	50mA	none
D0-HPP	200mA	none
DV1000	150mA	none

DL06 Power Consumed by Option Cards

Part Number	5 VDC (mA)	24 VDC (mA)
D0-07CDR	130mA	none
D0-08CDD1	100mA	none
D0-08TR	280mA	none
D0-10ND3	35mA	none
D0-10TD1	150mA	none
D0-10TD2	150mA	none
D0-16ND3	35mA	none
D0-16TD1	200mA	none
D0-16TD2	200mA	none
F0-04AD-1	50mA	none
F0-2AD2DA-2	50mA	30mA
F0-4AD2DA-1	100mA	40mA
F0-4AD2DA-2	100mA	none
D0-DEVNETS	45mA	none

Power Budgeting Example

Power Source		5VDC power (mA)	24VDC power (mA)
D0-06DD1 (select row A or row B)	A	1500mA	300mA
	B	2000mA	200mA
Current Required		**5VDC power (mA)**	**24VDC power (mA)**
D0-06DD1		600mA	280mA*
D0-16ND3		35mA	0
D0-10TD1		150mA	0
D0-08TR		280mA	0
F0-4AD2DA-1		100mA	0
D0-06LCD		50mA	0
Total Used		1215mA	280mA
Remaining	A	285mA	20mA
	B	785mA	note 1

* Auxiliary 24VDC used to power V+ terminal of D0-06DD1 sinking outputs.

Note 1: If the PLC's auxiliary 24VDC power source is used to power the sinking outputs, use power choice A, above.

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